to anticipate technical virginity in his bride is to be over-ridden. While there may be many arguments in favour of outgrowing the mediæval and oriental attitudes of masculine ownership, typified by the demand for absolute virginity, nevertheless an unthinking plunge into the reverse idea of making the rupture of the hymen a crude and automatic prenuptial arrangement will rouse not only instinctive antagonism in the majority of the stabler members of the community, but might very well have unexpected and anti-eugenic reactions. It seems rather a pity, while the struggle for proper contraceptive instruction for married women is still subjected to violent antagonism by theologians, to add this needless fuel to the flames.

With one general thesis of the book, namely, the need for further research and observation on the theory and practice of contraception, we are in full agreement; but think, however, that a more precise and accurate grip of other people's work, and more recognition of European predecessors, also a more thoroughly scientific attitude of mind, are wanted before any very great advance is likely to be made.

One might summarize the position now as being that ' the cap and chemical method is best for the normal ' was laid down as a fundamental principle in 1918 by the writer; and it is satisfactory that this book with its medical evidence and detailed research, in 1928, supports this and re-asserts that, ' in effect a cap and chemical is best.'

MARIE C. STOPES.

BATESON'S BIOLOGY

Punnett, R. C., F.R.S. (Ed.) *The Scientific Papers of William Bateson.* Cambridge, 1928. University Press. Two vols., pp. 450 & 503. Price £4-4-0.

THESE two volumes comprise practically all of Bateson's scientific contributions. In the first volume the papers deal mainly with variation, and include the introductory essay to *Materials for the Study of Variation.* The second volume contains the papers which appeared after the discovery of Mendel's laws, and are concerned more particularly with the results of experimental breeding. The plates, paper, printing, and binding are in the style at once excellent and unpretentious which we have learnt to expect from the Cambridge University Press; the only pity is that the price should be prohibitive.

As would be expected in a man of such pronounced views, controversy played a large part in Bateson's life; and it is interesting to have reprinted in these volumes Bateson's contributions to the scientific controversies into which he was drawn. Prodigious pains went to the preparation of his controversial papers, both in the collection of facts and in the marshalling of the argument. The late Lord Justice Bowen used to say that there was not a single fact in all the evidence of the celebrated Tichborne cases of which he (Lord Bowen) was not fully cognisant, and of which he was not prepared on the spur of the moment to give an immediate and correct account. Bateson conducted his controversies in a similar state of preparedness; his mastery of every relevant detail was marvellous. Added to this, his cautiousness of statement, his lucidity of expression, and, above all, his passionate demand for truth at all costs, made him a formidable opponent, and his contributions masterpieces of English prose at its best.

In his inaugural address to the University of Cambridge, on his admission to the newly created chair of Biology, Bateson used a phrase which aptly expressed much of his attitude towards science and his method in research. " Treasure your exceptions " was the advice he offered to beginners: it was also the guiding principle of his own investigations. It can be perceived at work throughout the thousand pages of the two volumes before us, from the first essay on *Balanoglossus* to his last review of his own genetic faith, the paper entitled " Segregation." It was the basis of his discontent with the easy assumptions of the later Darwinists; it is clearly the dominating motive in the *Materials for the Study of Variation.*

It accounts for his tardy acceptance of " Morganism," for his intense interest in the problem of " rogues " in garden peas, and for his absorption in the problem of plant chimaeras.

The same principle also explains—in part, at any rate—Bateson's aloofness from the eugenics movement. It was not that Bateson was no eugenist or that he believed in the sufficiency of ordinary social reform. On the contrary, no one ever expressed more pungently than did Bateson his belief in the ultimate futility of any social reform which ignored the innate inequality of man. And yet Bateson could never bring himself to advocate any measure of eugenic reform (let alone associate himself with others in any such advocacy) primarily because in the practical application of any eugenic principle the exceptions loom so large; and he found himself, not unnaturally, temperamentally out of sympathy with those who found it easier to overlook exceptions and were less appalled at the difficulties and uncertainties of even fairly obvious eugenic measures.

M. S. PEASE.

HUMAN EVOLUTION

Gregory, William K. *Our Face from Fish to Man.* London & New York, 1929. Putnam. Pp. 295. Price 18s.

IT would be rude to tell your friend that his face was only " a made-over fish-trap, concealed behind a smiling mask but still set with sharp teeth inherited from ferocious pre-mammalian forbears." Yet that is what Professor Gregory tells his reader, calling in an uncomplimentary artist to demonstrate the point beyond doubt. This book's cover design, which gives, as it were, a cinematographic picture of the quintessential face in its evolution from Devonian shark through the amphibia, mammalia, and so on to the early human types and modern man, is one of the most vivid demonstrations of evolution I have seen. It reminds the biologist of his acquaintances just as much as it does of his experimental material.

The book—rare virtue!—lives up to the cover design. It traces in considerable detail the evolution first of the face as a whole, then of the mouth, jaws, and teeth, the nose, the eyes, the ears. Finally it casts a rapid look backwards, reminds the lover of the anthropoid origin of the lips he worships, the amateur physiognomist of certain necessary correlations between endocrine balance and skeletal type, and generally exposes naked man, and especially his face, to the light of evolution.

This is good; for the evolutionary aspect is, in truth, the very heart of biology, which without that synthesizing, rationalizing link, would split up into a score of unrelated crafts, none of them worthy of the name of science. It is also—or, rather, should be—the heart of sociology, at which Professor Gregory just glances. He incidentally takes the opportunity on every other page to ask a ' poser ' of the ' Fundamentalists '—which perhaps may be necessary on his side of the Atlantic, though over here we flatter ourselves that they are not worth such heavy artillery.

One ancient query is in passing raised and as hurriedly dropped unanswered—possibly unseen. If it is true, as it seems, that in the course of evolution our eyes have gradually superseded our now degenerate noses, then why, how, is it that a smell, be it ever so faint and ghostly, can still recall more vividly than sight or sound past scenes and poignant emotions?

So often books of this type, meant for the lay reader, conceal beneath ' baby ' language which is positively insulting, an abyss of confused thought. This one goes rather to the other extreme. The thought and explanations are supremely lucid, but the abundance of technical anatomical details will prove a serious bar to anyone not intimate with the subject. On the other hand, it is a book few biologists will like to be without, while the layman can skim the surface with pleasure and understanding.

Illustrations, index, and bibliography are good.

F. A. E. CREW.